

# K2/Spice Synthetic Cannabinoids: Effects on the Human Body & Prosecuting Impairment DUIs

2013 APAAC Conference  
Tucson AZ



# Overview

- History/Development/Design
- Extent of problem
- Legal problems
- Current legal status
- Dangers of spice
- AAPCC calls
- DRE perspective
- What is known
- Ongoing efforts
- Tucson study
- Comparison of spice v. cannabis
- Case studies
- Testing limitations
- Special problems
- Lab abilities
- Successful prosecution

# What is “Spice/K2”?

- SYNTHETIC CANNABINOIDS
- CANNABIMIMETIC AGENTS



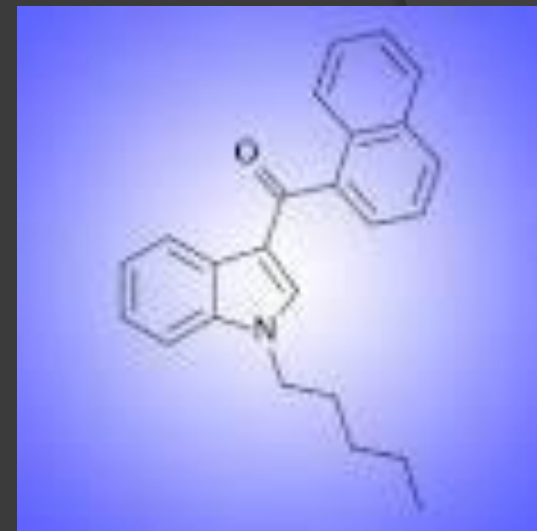
# Current legal THC synthetics

- Nabilone (Cesamet) – cancer treatment
- Dronabinol (Marinol) – cancer treatment/AIDS

# History

- John W. Huffman – JWH series
- Pfizer – CP series
- Hebrew Univ. – HU series
- Purpose/Effects
- CB1/CB2 K1

JWH-018



“We had no idea that anyone would be stupid enough to use it.” - Huffman

# History

- ⦿ Europe 2004 “Spice”
- ⦿ Europe 2008 “K2”
- ⦿ 12/08 JHW-018 identified in Germany
- ⦿ 01/09 CP-47,497 identified in Germany
- ⦿ 03/09 HU-210 identified by DEA
- ⦿ EMCDDA began to monitor in 2008
- ⦿ Spice hit US ~2008

# What's in spice?

## Ingredients:

Baybean, Blue Lotus Flowers, Dwarf Skullcap, Wild Dagga, Indian Warrior Buds, Lion's Tail, Maconha Brava, Pink Lotus, Siberian Motherwort, Marshmallow

FT Magazine

vanilla/honey for taste  
project

Psychonaut web mapping

+ ?????

# How spice is produced

- Easy online recipes
- Mixture of plant materials
- Simple spray, mix, and dry method
- 2 oz foliage, 1g synthetic cannabinoid, acetone, spray bottle, baking dish
- Large scale lab productions

\*hotspots, multiples, vitamin E





# Dangers of spice

- Strength of chemical(s)
- # of chemicals
- Additives
- Production method / hotspots



# Why are people using spice?

- ⦿ Marijuana substitute
- ⦿ Powerful high
- ⦿ Passing drug screen tests for work
- ⦿ Experimenters
- ⦿ Prisons/Probation/Military/Juveniles
- ⦿ Ease of access – hard to detect by LE, parents, etc.
- ⦿ Those interested in using legal biogenic drugs

# How spice is packaged/sold

1-3 gram packets

3x3.75" foil packet with logo

some in jars/vials



# How spice is used



# Lazy Cakes

Spice + melatonin

Brownie sold as dietary supplement

“unwind” “simmer”

\$4

3.9 mg melatonin/serving, 7.8 mg/cake

Melatonin typically sold 1 mg - 5 mg tabs

# Popularity / Trending

- ⦿ Popular DRE certs
- ⦿ Current analogue trends

# The Legal Game





# Disclaimers

Not for human consumption

Herbal Incense

“Disclaimer: Chronic is **not for human consumption**, it may be dangerous to your health if ingested or inhaled. Chronic Incense Online takes no responsibility for damage or bodily harm that might occur from human consumption, or act of a person when using Chronic”

“This product is sold as aromatic herbal incense, no other use is intended or implied. Herbal incense products are not intended for human consumption. Statements regarding this product have not been evaluated by the FDA. This product is not intended to treat, cure, diagnose, or prevent any disease.”

**JWH018/073 FREE**

Lab Certified

Tobacco and nicotine free

Not suitable for under the age of 18

Proprietary blend



# Homologue Explosion



Different  
Manufacturers/Brands

Street Chemists



# Homologue explosion (cont.)

JWH series

CP series

HU series

Now approximately  
300 cannabinoids

RCS series

WIN series

AM series

UR series

URB series

O series

XLR series

AKB series

AB series

STS series

PB series

MAM series.....

# 7 Major Structural Groups

1. Naphthoylindoles (e.g. JWH-018, JWH-073, JWH-398)
2. Naphthylmethyldindoles
3. Naphthoylpyrroles
4. Naphthylmethyldindenes
5. Phenylacetylindoles (i.e. benzoylindoles, e.g. JWH-250)
6. Cyclohexylphenols (e.g. CP-47, 497 and homologues)
7. Classical cannabinoids (e.g. HU-210)

# Short list of spice products

<http://k2spice.blogspot.com/>

007, 7H Potpourri, Afterlife, All Shpark, Am-Hi-Co, Amsterdam Attic, Atomic Bomb, B-52, Baked Goods, Barely Legal, Bayou Blaster, Black Mamba, Black Out, Black Widow, Blue Lotus, Blueberry Kush, Brain Sick, Burnin Man, Cahsed, Cherry Chong, Cloud 10, Cloud 9, Code Black, Code Black Black Label, Code Black Plus, Crazy Eyes, Crazy Monkey, Cush, Da Bomb, Da Kine Blend, Damiana, Dank, Dead Man Walking, Death Wish, Deew, Demon Free, Deversion 2.0, Down2Earth, Element X, fire, Flame, Fly Agaric, Fly High 10x, Fly High 5x, FUBAR 5.0, FUBAR Fire, Funky Monkey 20x, Golden Leaf xxx, Grizzly, Groove, H2O, Hammerhead, Happy Hour, Hawaiian Baby Woodrose, Headsmasher, Herbal Incense, Hi5 Triple X, High Grade Diesel, Hindu Magic, HomeGrownHerbz, Jeffrey, Joe's Jungle V3, Juicy Chong, K2 Amazonian Shelter, K2 Blonde, K2 Blue, K2 Chill,

K2 Citron, K2 Fruit Punch, K2 Orisha, K2 Premium Blend, K2 Sky, K2 solid Sex, K2 Summit, K2 Summit 2.0, K2 Ultra, K9 Potpourri, Kanna, Kannabliss, Kava, KickAss, King Kush, Kratom, Kryptonite 10x, Kush, Kush Pink, Mad Hatter, Mad Maxx, Magic Blends, Magnolia Rush, Malibu Fire, Mary Joy, Mary Joy Warning, Mazzar, Mind Wave, Mr. Nice Guy, Mystic diamond Blue, Mystic Diamond Extreme, Naked Lady, Nugz, Optima, Pacific blue Kratom, Panic, Passion Sense, Pineapple Express, Power Diesel,

Primo, Purps, Pyara, Red Bull, Relaxinol, ripits, San Pedro Cactus, Scooby Snax, Seasons Beathings, six Scents, Sky Pilot, Smokin Camel 10x, Smokin Dragon, soul Meds Head Trip, Spicester Summit, Spike Max, Sponge Bud, Storm, Strawberry Slush, Stuk, super Kush, SuperNova, That Kill, THB Solid, Three Wisemen, Tokin, Trainwreck mango, Triple X Rated, Voodoo Doll, White Rabbit, White Widow, Wicked Lady, Wicked X, Wild Dagga, XXX Rated, Zero Gravity, Zombie Matter

# AAPCC Spice Exposure Calls

## National

2009 – 112 calls

2010 – 2915 calls

2011 – appr. 7000  
calls

## Arizona

2010 – 166 calls

2011 – 284 calls

2012 – appr. 300  
calls

# National Attention

DEMI MOORE

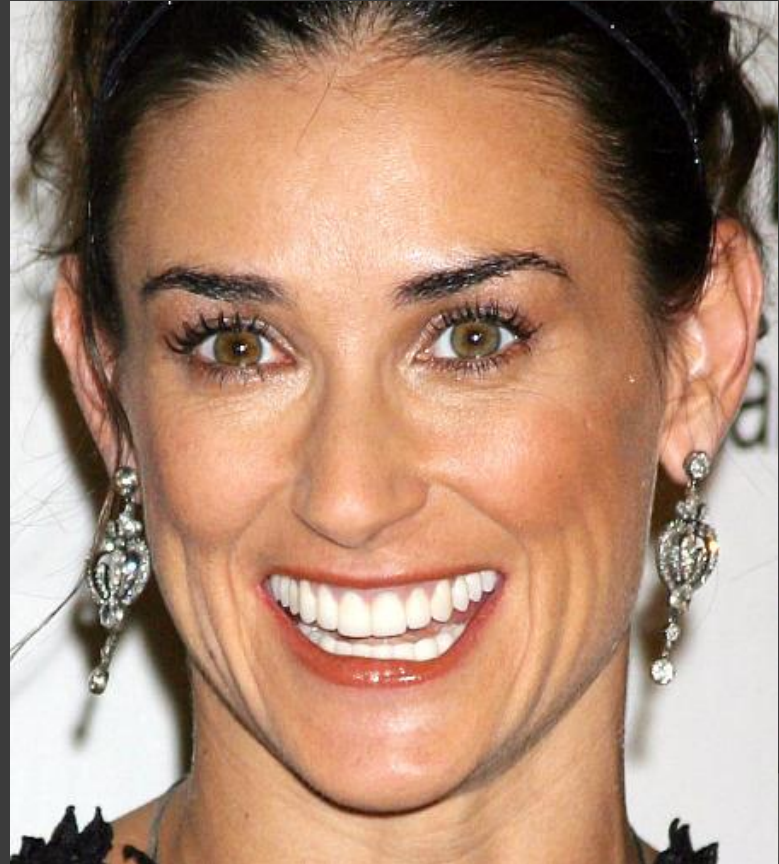
01/23/12

911 call –

Convulsions

Semi-conscious

Unable to speak



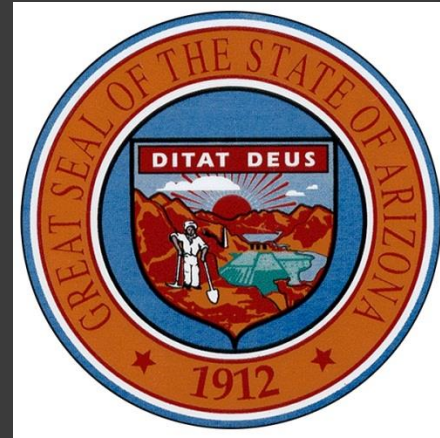
# The Legal Framework

(Pre- April 3, 2013)



- A.R.S. § 13-3401(6)(a)(xxxiv)-(xlili)
- 10 specific synthetic cannabinoids outlawed prior to April 3, 2013
- Classified as Dangerous Drugs
- Possession prohibited under A.R.S. § 13-3407(A)(1), Class 4 Felony
- No criminal regulation of **numerous** other varieties in existence

# House Bill 2327



- Signed into law April 3, 2013
- Effective **Immediately**
- Adds brand new subsection (b) to A.R.S. § 13-3401(6)
- Deals **specifically** with synthetic cannabinoids
- Expands the list to at least 138 varieties



- (b) Any material, compound, mixture or preparation which contains any quantity of cannabimimetic substances and their salts, isomers, whether optical, positional or geometric, and salts of isomers, unless specifically excepted, whenever the existence of such salts, isomers and salts of isomers is possible within the specific chemical designation. For the purposes of this subdivision, “cannabimimetic substances” means any substances within the following structural classes:
- (i) 2-(3-hydroxycyclohexyl)phenol with substitution at the 5-position of the phenolic ring by alkyl or alkenyl, whether or not substituted on the cyclohexyl ring to any extent. Substances in the 2-(3-hydroxycyclohexyl)phenol generic definition include CP-47,497, CP-47,497 C8-homolog, CP-55,940 and CP-56,667.
- (ii) 3-(naphthoyl)indole or 3-(naphthylmethane)indole by substitution at the nitrogen atom of the indole ring, whether or not further substituted on the indole ring to any extent, whether or not substituted on the naphthoyl or naphthyl ring to any extent. Substances in the 3-(naphthoyl)indole generic definition include AM-678, AM-2201, JWH-004, JWH-007, JWH-009, JWH-015, JWH-016, JWH-018, JWH-019, JWH-020, JWH-046, JWH-047, JWH-048, JWH-049, JWH-050, JWH-070, JWH-071, JWH-072, JWH-073, JWH-076, JWH-079, JWH-080, JWH-081, JWH-082, JWH-094, JWH-096, JWH-098, JWH-116, JWH-120, JWH-122, JWH-148, JWH-149, JWH-175, JWH-180, JWH-181, JWH-182, JWH-184, JWH-185, JWH-189, JWH-192, JWH-193, JWH-194, JWH-195, JWH-196, JWH-197, JWH-199, JWH-200, JWH-210, JWH-211, JWH-212, JWH-213, JWH-234, JWH-235, JWH-236, JWH-239, JWH-240, JWH-241, JWH-242, JWH-262, JWH-386, JWH-387, JWH-394, JWH-395, JWH-397, JWH-398, JWH-399, JWH-400, JWH-412, JWH-413, JWH-414 and JWH-415.
- (iii) 3-(naphthoyl)pyrrole by substitution at the nitrogen atom of the pyrrole ring, whether or not further substituted in the pyrrole ring to any extent, whether or not substituted on the naphthoyl ring to any extent. Substances in the 3-(naphthoyl)pyrrole generic definition include JWH-030, JWH-145, JWH-146, JWH-147, JWH-150, JWH-156, JWH-243, JWH-244, JWH-245, JWH-246, JWH-292, JWH-293, JWH-307, JWH-308, JWH-346, JWH-348, JWH-363, JWH-364, JWH-365, JWH-367, JWH-368, JWH-369, JWH-370, JWH-371, JWH-373 and JWH-392.
- (iv) 1-(naphthylmethylene)indene by substitution of the 3-position of the indene ring, whether or not further substituted in the indene ring to any extent, whether or not substituted on the naphthyl ring to any extent. Substances in the 1-(naphthylmethylene)indene generic definition include JWH-176.
- (v) 3-(phenylacetyl)indole or 3-(benzoyl)indole by substitution at the nitrogen atom of the indole ring, whether or not further substituted in the indole ring to any extent, whether or not substituted on the phenyl ring to any extent. Substances in the 3-(phenylacetyl)indole generic definition include AM-694, AM-2233, JWH-167, JWH-201, JWH-202, JWH-203, JWH-204, JWH-205, JWH-206, JWH-207, JWH-208, JWH-209, JWH-237, JWH-248, JWH-250, JWH-251, JWH-253, JWH-302, JWH-303, JWH-304, JWH-305, JWH-306, JWH-311, JWH-312, JWH-313, JWH-314, JWH-315, JWH-316, RCS-4, RCS-8, SR-18 and SR-19.
- (vi) 3-(cyclopropylmethanone) indole or 3-(cyclobutylmethanone) indole or 3-(cyclopentylmethanone) indole by substitution at the nitrogen atom of the indole ring, whether or not further substituted in the indole ring to any extent, whether or not substituted on the cyclopropyl, cyclobutyl or cyclopentyl rings to any extent. Substances in the 3-(cyclopropylmethanone) indole generic definition include UR-144, FLUORO-UR-144 and XLR-11.

# Whew!



Statute now very comprehensive, but not necessarily exhaustive. More on the “analogue problem” later.

# DUI Law and a “Legal Drug”

- ◎ A.R.S. 28-1381(A)(1):
  - “While under the influence of . . . ***any drug*** . . . .”
  - This does **NOT** have to be an illegal drug
    - (For offenses occurring after 4/3/13, it probably is illegal- the point is that your particular variety of synthetic cannabinoid’s legal status at the time of offense should not be a barrier)
- ◎ A.R.S. 28-1381(A)(3):
  - Drug defined in § 13-3401 in the person’s body
  - With expanded list of banned synthetic cannabinoids defined by statute, prosecution under this subsection could theoretically be possible as well.

# Dangers of driving



# Current Knowledge

- ⦿ 2010 DRE conference initial info  
Alaska TSRP Jennifer Messick
- ⦿ 2011 DRE conference
- ⦿ Auwarter - self dose, report
- ⦿ Zimmerman - possible withdrawal symptoms

# Auwarter

German researcher (self dose)

1 cigarette .3 g Spice Diamond

Effects 1<sup>st</sup> occurred 10 minutes later

Reddened conjunctiva, increased pulse,  
xerostomia, altered mood/perception

Effects lasted around 6 hours

Side effects the next day

# Zimmerman

Withdrawal symptoms of heavy user of  
Spice Gold, 1-3 g/day for 8 months

Developed tolerance

W/D – profuse sweating, internal unrest,  
tremors, palpitations, insomnia,  
headache, diarrhea, nausea, vomiting,  
depressed, desperation, nightmares,  
increased BP, increased pulse

# Pharmacology /

## Duration of Effects

According to EMCDDA

- ⦿ JWH-018 effects 1-2 hours
- ⦿ CP 47,497 effects 5-6 hours

According to Redwood Toxicology

Window of detection 72 hr urine, 24-48 hr saliva

- ⦿ Largely unknown and can vary from substance, type, dose, etc.



# Initial Comparison of Cannabis v Spice

## CANNABIS



No HGN

No VGN

LOC

Pupil size dilated, possibly normal

RTL normal

Pulse up

BP up

Temp normal

Muscle tone normal

## SPICE



HGN possible

VGN possible

(Other types of nystagmus?)

LOC

Pupil size dilated/normal?

RTL slow/normal?

Pulse up/normal? – generally reported up

BP up/down/normal? – generally reported up

Temp up/down/normal?

Muscle tone flaccid/normal

# Initial Comparison of Cannabis v Spice

## CANNABIS

Bloodshot/watery eyes  
Residue/debris  
Reddened conjunctiva  
Distinct odor  
Tremors  
No paranoia/anxiety  
No hallucinations  
Not physically addictive  
Able to detect blood/urine  
Well known symptoms  
Well known duration  
Delta 9 THC



## SPICE

Bloodshot/watery eyes  
Residue/debris  
Reddened conjunctiva  
No distinct odor  
Tremors  
Possible paranoia/anxiety  
Possible hallucinations/psychotic episodes  
Reports of addiction/withdrawal  
Limitations on detection  
Mixed/unpredictable symptoms  
Variables  
Unregulated mixtures  
\*Nausea, vomiting, headache, palpitations, dry mouth, altered mood/perception, sweating



+ variables

# What's being called?



Top 5 answers:

- ⦿ Cann/CNSD
- ⦿ Cann/CNSS/  
CNSD
- ⦿ Other
- ⦿ Spice
- ⦿ Cannabis

**\*\*Current direction from TAP - Cannabis**

# Ongoing Efforts

- NMS labs/Missourri – Dr. Barry Logan  
human dosing  
2010 (6), 2011 (6)  
5/2012 scheduled (6-8)\*
- TPD/UMC/NMS – symptomatology  
study
- Other Efforts Started (Alaska)

# TPD/UMC spice symptomatology study

- ⦿ Limited efforts into spice symptomatology
- ⦿ Approached problem from DRE call perspective
- ⦿ Calls and S/S erratic
- ⦿ S/S comparison Cannabis v Spice
- ⦿ Forward info to TAP
- ⦿ Increase knowledge base
- ⦿ Submit for publication

# Study parameters

- ⦿ AZ law enforcement cases
- ⦿ Retrospective analysis
- ⦿ Self reported use and/or possession
- ⦿ Arrested for DUI
- ⦿ DRE evaluation completed
- ⦿ Non-inclusive if other toxicants present
- ⦿ Comparison cannabis v. spice symptoms

# Study parameters

- Spice cases

3/10 – 8/12      103 cases      n=16

- Cannabis cases

1/10-7/12      33 cases      n=25

# Info Breakdown

- ⦿ General
- ⦿ DRE matrix
- ⦿ Signs/Symptoms
- ⦿ Other



# Study Findings/Data for DRE

Cannabis N=25

HGN 12%

LOC 96%



Pupils - Dilated 80%, Normal 20%

RTL – Normal 72%, Slow 28%

Pulse – Up 60%, Normal 40%

BP – Up 24%, Down 52%, Normal 24%

Temp – Up 12%, Down 16%, Normal 72%

MT – Flaccid 12%, Normal 84%

Rebound Dilation 92%

Tremors 100%

Speech, Orientation, Balance, Mood problems

Bloodshot/watery eyes, Face flushed

Reddened conjunctiva, Droopy eyelids

FST Impairment

Spice N=16

**HGN 53%**

LOC 80%



Pupils - Dilated 73%, Normal 26%

RTL – Normal 78%, Slow 14%

Pulse – Up 68%, Normal 31%

**BP** – Up 25%, Down 43%, Normal 31%

Temp – Down 20%, Normal 73%

**MT** – Flaccid 28%, Rigid 21%, Normal 50%

Rebound Dilation 64%

Tremors 68%

Speech, Orientation, Balance, Mood problems

Bloodshot/watery eyes, Face possibly flushed

Reddened conjunctiva, Droopy eyelids

FST Impairment

# Case Study

## ◎ Stone/Toole

Passed out behind wheel wrong way

Long time marijuana smoker, using spice now trying to get a job

Lethargic very poor balance slurred/thick speech confused bs/w eyes pale  
face droopy eyelids tremors reddened conjunctiva green coating  
0.00 BAC

“I smoked some legal s\*\*t” smoked “something weird, some weird s\*\*t, like  
potpourri s\*\*t”

“high wise, pretty high, that s\*\*t gets me pretty f\*\*g high”

Pendular type nystagmus

At scene appr 2151: 116bpm

4/4 OLS, WAT stopped for safety

At station appr 2255: 94/64/60 BPM, 84/58 BP, 97.3 Temp

Rhomberg 40 sec., Positive LOC

Pupils dilated, RTL normal, Rebound dilation, MT normal

“that s\*\*t’s different than weed, it only gets you high 20 to 30 minutes, when you  
smoke weed, you get high for 3 to 4 hours”

# Testing Limitations

- ⦿ Labs need standards for comparison
- ⦿ Limited data available
- ⦿ Standards being developed
- ⦿ Behind the 8-ball
- ⦿ NMS, Redwood, Cayman, Tocris
- ⦿ Get blood and urine if possible?
- ⦿ Expert availability
- ⦿ \$\$\$

# Overview of Problems

- ⦿ HGN
- ⦿ DRE matrix calls
- ⦿ Need blanket law
- ⦿ # different cannabinoids, strength, S/S variables
- ⦿ Manufacturing differences, batch to batch
- ⦿ Not FDA controlled
- ⦿ Untruthfulness on packaging/Disclaimers
- ⦿ Manufacturers ahead of legal status
- ⦿ Testing limitations/Cost limitations for sample test
- ⦿ Slow State/Federal response

# Special Problems

- ⦿ DEA scheduling
- ⦿ State response
- ⦿ Analogue Dilemma

# How to Prove a Spice DUI?



# Limitations/Challenges

- ⦿ Juries unfamiliar with the drug and its effects
- ⦿ Inability to get blood tests for synthetic cannabinoids\*
- ⦿ Maybe even inability to test any substances found on scene using traditional lab methods
  - More on how to overcome this later
- ⦿ Arresting officers may not be as well-trained in the signs and symptoms of Spice/K2 as with alcohol or other illegal/prescription drugs

\*Note, for major cases, samples CAN be sent to outside labs. NMS labs in particular may be one place to go.

# Useful Evidence for Spice DUI

- ◎ DRE Evaluation, or if not available, DRE/drug criminalist testimony after the fact- what can we expect to see with synthetic cannabinoids?
  - Elicit testimony corresponding to signs observed in your case and let jury connect the two.
- ◎ Admissions- always useful but excellent here- can link signs observed to the drug itself.
  - Additionally, legal status can be in your favor- Defendants may make admissions thinking that there is nothing wrong/illegal with driving after smoking spice.
- ◎ Seized spice/paraphernalia in vehicle or in defendant's possession- not just useful for analysis but also for the packaging itself.



“Not for human consumption”



# St. v. Frazier



# Key facts

- 25 year old female sitting behind wheel of vehicle driven into ditch
- Driver appears confused. When instructed to shut vehicle off and open door, she looks for handle to door but cannot seem to find it.
- Rolls down window instead, instructed five more times to shut off vehicle, turns key wrong way in ignition.
- When she finally turns off car, holds keys and stares at them for extended period of time.
- Eventually hands deputy packet of “Kush,” identifies it as incense and says “This is all that I am on.”

# Key Facts (cont.)

- ◉ Exits from car, uses car for support, staggering while standing in place.
- ◉ No odor of intoxicants, but red eyes and slow speech.
- ◉ Pre-test interview: states she is having problems with balance right now because she “hasn’t smoked in a really long time.”
- ◉ Walk and turn test: five out of eight cues.
- ◉ One leg stand: when instructed to do one leg stand, driver performs walk and turn a second time instead.
- ◉ Post arrest, admits to having smoked spice earlier in the day, admits to feeling the effects (4/10) and that she shouldn’t have been driving.

# Lab Analysis

- Blood analysis: no alcohol or other drugs detected. DPS lab not currently set up to analyze blood for synthetic cannabinoids.
- Plant material analysis, from seized “Kush” package:
  - DPS lab analyzed for 10 substances banned before April 3, the only substances the lab had standards available for testing: none detected.
  - DPS criminalist took retention times/ spectra from gas chromatography/mass spectrometry analysis and compared to Cayman Library- library of standards published by Cayman Chemical, provider of standards to DPS lab



# Lab Analysis (cont.)

- Results: JWH-122 and MAM-2201
  - JWH-122 now banned under new law, as is AM-2201. MAM-2201 is a hybrid of the two.
- Note: Not a PUBLISHED result per DPS lab protocols, since DPS lab did not have a known standard available for testing for either chemical

# How to admit this testimony?

- ⦿ In this case, mini-*Daubert* hearing, took place outside of the presence of the jury before analyzing criminalist was permitted to testify to her findings
  - May want pre-trial motion *in limine*.
- ⦿ Simply because the result wasn't obtained using the standard DPS procedure, that isn't dispositive in the analysis for admissibility.
- ⦿ Criminalist testified that the Cayman Library is considered reliable for identification of synthetic drugs via comparison of spectra obtained from unknown samples to database.
- ⦿ Cayman supplies standards to DPS lab- those were analyzed again by DPS and results compared to the published figures before implementation in the lab.
  - In all cases DPS and this criminalist have found them to be accurate.





# How to admit this testimony (cont.)

- ⦿ In sum, this is an accurate and sufficiently reliable method of identifying the sample.
- ⦿ Questions with the method should go to weight, not admissibility, defense is free to bring these issues to the jury's attention.
  - Comment to 2012 amendment to Ariz. R. Evid. 702: "Cross examination, presentation of contrary evidence, and careful instruction on the burden of proof are the traditional and appropriate means of attacking shaky but admissible evidence."
- ⦿ Expert has reliably applied method to this sample (DPS QA protocols still followed in determining spectra and retention times of unknown sample).
- ⦿ Ultimately, court permitted criminalist to testify to the comparison.

# Connecting it all together

- Deputies testified to signs and symptoms observed, as well as admissions to smoking the “Kush” found with Defendant (and associated paraphernalia).
- Blood criminalist provided additional testimony about signs and symptoms to be expected in individuals under the influence of synthetic cannabinoids generally.
  - You may also wish to have a DRE provide this testimony- or better yet if a DRE was involved in the investigation (here, neither deputy on scene was one).
- Drug criminalist testified to identification of specific synthetic cannabinoids in evidence.

# Helpful Jury Instruction

*“Evidence may be direct or circumstantial. Direct evidence is a physical exhibit or the testimony of a witness who saw, heard, touched, smelled or otherwise actually perceived an event. Circumstantial evidence is the proof of a fact or facts from which the existence of another fact may be determined. The law makes no distinction between direct and circumstantial evidence. You must determine the weight to be given to all the evidence without regard to whether it is direct or circumstantial.”*

- RAJI Preliminary Criminal 4 – Direct and Circumstantial Evidence

# Takeaway

- ⦿ Proving a Spice/K2 DUI is not impossible.
- ⦿ Even in an alcohol case, blood evidence may get suppressed for some reason. Still possible to go to trial based on signs and symptoms, field sobriety tests.
  - Same holds true for DUIs with Spice/K2/other synthetic cannabinoids.
- ⦿ Try to get additional evidence as well. Lab tests of any seized plant materials, paraphernalia with residue, etc. Talk to your criminalist about what they will be comfortable testifying to- especially if you are looking for a comparison to Cayman Library.
- ⦿ This type of case may take extra preparation, lab coordination, extra witnesses, but. . .

**IT CAN BE DONE!**

# Contact Info

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# References

- ⦿ EMCDDA
- ⦿ NAMSDL
- ⦿ Designerdrugtrends.org
- ⦿ Psychonaut web mapping
- ⦿ NMS Labs – Dr Barry Logan